



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,116	07/30/2003	Jae-Woo Im	5649-1103	8336
20792	7590	09/27/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			HO, HOAI V	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			2818	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,116

Applicant(s)

IM ET AL.

Examiner

Hoai V. Ho

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 25-41 is/are allowed.
- 6) ☒ Claim(s) 9,16-19,21, 22 and 24 is/are rejected.
- 7) ☒ Claim(s) 10-15,20 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/30/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2818

1. This office acknowledges receipt of the following items from the Applicant:

Information Disclosure Statement (IDS) was considered.

Papers submitted under 35 U.S.C. 119(a)-(d) have been placed of record in the file.

2. Claims 1-41 are presented for examination.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 9, 16, 18, 19, 21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. U. S. Patent No. 5699306.

Lee, starting at column 1, lines 37-47, is directed to disclose a flash memory comprising: a first redundancy circuit configured to store an address of a defective memory cell in the flash memory; and a second redundancy circuit, separate from the first redundancy circuit, configured to store the address of the defective memory cell.

5. Claims 9, 16, 18, 19, 21 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim U. S. Patent No. 6462994.

Kim, starting at column 12, lines 60 and 61 or claim 15, is directed to disclose a flash memory comprising: a first redundancy circuit configured to store an address of a defective memory cell in the flash memory; and a second redundancy circuit, separate from the first redundancy circuit, configured to store the address of the defective memory cell.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U. S. Patent No. 5699306 or Kim U. S. Patent No. 6462994 in view of Akaogi et al. U. S. Patent No. 6240040.

Lee or Kim discloses all the subject matter claimed except for wherein the flash memory is configured to perform a first read or write operation in a first sector of a bank of the

flash memory while simultaneously performing a second read or write operation in a second sector of another bank of the flash memory.

However, this limitation was well known in the art at the time the invention was made. For example, Akaogi starts at column 5, lines 6-13 to disclose wherein the flash memory is configured to perform a first read or write operation in a first sector of a bank of the flash memory while simultaneously performing a second read or write operation in a second sector of another bank of the flash memory. It would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Lee or Kim's flash memory which utilizes the performance of simultaneous read and writing operations as taught by Akaogi because Akaogi suggests that in order to provide an extendable and flexible multiple bank architecture that is capable of simultaneous operation, that is, that allows simultaneous read and write operations (col. 17, lines 36-39).

8. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. Kwong et al. (USP 5347484) discloses a nonvolatile memory device with blocked redundancy.

Allowable Subject matter

9. Claims 1-8 and 25-41 are allowed.

10. Claims 10-15, 20 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-8, 10-15, 20, 23 and 25-31 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure, taken individually or in combination, does not teach or suggest the claimed invention having a flash memory comprising: a first redundancy circuit configured to provide read repair information for read operations to the flash memory; and a second redundancy circuit, separate from the first redundancy circuit, configured to provide write repair information for write operations to the flash.

12. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

13. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02 (b)).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai V. Ho whose telephone number is (571) 272-1777. The examiner can normally be reached on 7:00 AM -- 5:30 PM from Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



hvh
August 23, 2004



Hoai V. Ho
Primary Examiner
Art Unit 2818